

INTRODUCTORY COMMENTS

Summary of Office Action

Claims 1-16 were pending in the application.

The Examiner has objected to the drawings on the ground that element **38** recited in the specification does not appear in the drawings.

The Examiner has objected to the title, specification and form of the claims.

The Examiner has rejected claim 1 under 35 U.S.C. § 102(b) as purportedly anticipated by U.S. Pat. Nos. 5,743,765 to Andrews et al.

The Examiner has rejected claims 2-16 under 35 U.S.C. § 103(a) as purportedly unpatentable over Andrews et al. in view of U.S. Pat. Nos. 6,435,913 to Billman and U.S. Pub. Pat. App. No. 2004/0005815 A1 to Mizumura et al.

Summary of the Applicant's Response

Corrected replacement Figure 1 that labels element **38** is hereby submitted, thereby obviating the Examiner's objections to the specification.

The title, specification and claims have been amended to overcome the Examiner's objections.

Claim 1 has been amended to include the limitations of claims 2 and 3.

Claims 2, 3 and 8-10 have been canceled.

Claims 6 and 7 have been amended to remove their purported substantial duplication of claims 4 and 5.

It is respectfully submitted that the prior art cited by the Examiner neither anticipates nor renders obvious claims 1, 4-7 and 10-16 that are pending in the application.

REMARKS

Objection to the Drawings

In the Office Action, the Examiner objected to the drawings on the ground that they did not include the reference sign "38" that is mentioned at Paragraph [0024] of the description and

requested that corrected drawing sheets be submitted. Applicant is grateful to the Examiner for pointing out this inconsistency. The reference numeral **38** that appears in the Japanese priority document was accidentally omitted from Figure 1. Applicant hereby submits a revised Figure with element **38** (ground contacts) indicated.

Objections to the Specification

The reference to “Fig. 1” in Paragraph [0037] is correct. As noted above, the label **38** was accidentally omitted from Figure 1 and has been included in the replacement sheet submitted herewith. Applicants submit that no new matter is added by this alteration, since Figure 1 was correctly labeled in the priority document and since references to element **38** in Figure 1 are found throughout the specification.

In light of the Examiner’s objection, the title of the application has been changed from “Electrical Connector” to “An Electrical Connector for Use With High Frequency Signals.” Applicant respectfully submits that the new title is descriptive of the present invention and thereby overcomes the objection by clearly indicating the invention to which the claims are directed.

Objections to the Claims

Claim 1 has been amended to change “grand contacts” to “ground contacts.” Applicants are grateful to the Examiner for noticing this typographical error.

In light of the Examiner’s objection to dependent claims 2, 4 and 6, for lack of proper antecedent basis for the limitations “the fitting side” and “the connecting side,” independent claim 1 has been amended to include the limitation of “said block including a fitting side and a connecting side for connecting to a board.” Applicant respectfully submits that, since claim 2 has been canceled and claims 4 and 6 depend from claim 1, the limitations “the fitting side” and “the connecting side” in pending claims 4 and 6 derive proper antecedent basis from currently amended independent claim 1.

In view of the Examiner’s objection to claims 4, 5, 11 and 15 for substantially duplicating claims 6, 7, 12 and 16, Applicant has amended claim 6, changing “one pair of pin contacts . . . consisting of a plurality of the pin contacts” to “sets of pin contacts . . . consisting of three or

more of the pin contacts.” Claims 5, 11 and 15 depend from claim 4, and so contain the limitation of “pairs” of contacts. On the other hand, claims 7, 12, and 16 depend from claim 6, and so contain the limitation of “sets of pin contacts.” Accordingly, Applicants respectfully submit that the sets of three or more contacts of claim 6, 7, 12 and 16, do not substantially duplicate the pairs of contacts recited in claim 4, 5, 11 and 15, thereby obviating the Examiner’s objection.

Currently amended claim 1

In the Office Action of August 23, 2004, the Examiner rejected claim 1 under Section 102(b) as purportedly anticipated by Andrews et al. The Examiner writes that Andrews “teaches that a socket connector **1** is formed from an insulating material and is coated with metal layers **11, 12**, but not in the cavities **5, 6** for a terminal **14**. Also Andrew teaches that pin connector **24** and a socket connector **23** in Figure 6 are provided with metal layers **25, 26**. In Figure 9a-9c, Andrews teaches the pin connector **50** and socket connector **53**, each having ground contacts **57, 59**.” Office Action at page 2.

The Examiner however acknowledges, in the purported Section 103(a) rejection of claims 2-16, *id.*, that Andrews et al. discloses a connector having contact insertion cavities that are *not* coated with metal. *See also* Andrews et al., Figs 1 and 2, element 5 and col. 3, lines 52-52 and Fig. 7, element 36 and col. 5, lines 52-54. As further acknowledged by the Examiner in the same Section 103(a) rejection, Office Action at page 2, Andrews et al. does not disclose grooves in a block surrounding the pin contacts to shield such contacts one from the other. Furthermore, notwithstanding the Examiner’s assertion to the contrary, *id.*, Andrews et al. does *not* disclose groove portions in the housing surrounding the ground contacts to shield such contacts one from the other. *See, e.g.*, Andrews Figs. 2 and 4-8 (showing no such groove portions). In any event, Applicants are unable to identify “grooves **33**” in either of Figures 9a or 9c of Andrews et al. that are relied upon by the Examiner. In fact, Andrews et al. identifies elements **33** as “cavity walls,” col. 5, lines 1-4, making these elements the exact opposite of the grooves that the Examiner claims them to be.

In contrast, currently amended claim 1 recites “[a]n electrical connector comprising a pin connector and a socket connector . . . wherein . . . said block and housing each

have *metallized surfaces fully around said contact insertion apertures* in a manner to electrically shield said contact insertion apertures for pin and socket contacts independently from one another (emphasis added). Currently amended claim 1 further recites the limitation of “said block of said pin connector is formed with grooves on either one, or both, of the fitting side of said block and the connecting side to a board to make independent said pin contacts from one another” and “said housing of said socket connector is formed with groove portions on the fitting side of said housing to make independent said socket contacts from one another.”

Accordingly, for at least the reasons that Andrews et al. neither disclose nor suggests (1) a block and housing each having metallized surfaces fully around said contact insertion apertures, (2) grooves on the block of the pin connector to make the pin contacts independent from one another, and (3) groove portions on the housing of the socket connector to make the socket contacts independent from one another, Applicants respectfully submit that currently amended claim 1 is neither anticipated nor rendered obvious by Andrews et al.

Claim 1, as currently amended, contains the all of the limitation of canceled claims 2 and 3, which claims stand rejected in the Office Action mailed on August 23, 2004, as purportedly obvious over Andrews et al. in view of Billman and Mizumura et al. Applicants respectfully submit that the limitations of claims 2 and 3, as contained in currently amended claim 1, are not rendered obvious by Andrews et al. in view of Billman and Mizumura.

Without identifying specific claims, the Examiner asserts that Billman’s use of interlocking shields 8 and 9 located in “grooves 54” is equivalent to the metallized grooves of the present invention and therefore renders obvious the claimed metallized grooves disposed on the block and housing for isolating the contacts. Applicants respectfully disagree. Billman’s use of interlocking shields is based on an entirely different technology, mechanical assembly of metal strips that are then lodged in grooves, which does not suggest the metallized grooves of the present invention. If anything, Billman’s use of grooves as a mere mechanical support for pre-assembled metallic shields teaches away from using grooves that are coated with a thin metal layer on their insides in place of shields. In any event, one of ordinary skill would understand that the type of the electrical shielding afforded by shields protruding from unmetallized grooves would be inherently different from that provided by the metallized grooves of the present invention, rendering the two methods of shielding nonequivalent.

The Examiner further relies on Mizimura et al. to disclose “an electrical connector 10 comprising a socket connector having grooves 15 and 140-145 in cross shape,” but acknowledges that, like Billman, Mizimura uses shield plates, rather than the metallized grooves of the present invention. Accordingly, since a cross shape is not a limitation of currently amended claim 1, and shields do not disclose or suggest metallized grooves, as discussed above in regards to Billman, Mizimura et al. does not disclose or suggest the grooves and groove portions that make pin and ground contacts independent of one another as recited in claim 1.

Accordingly, Applicants respectfully submit that, for at least the reason that neither Billman nor Mizumura et al. disclose or even suggest metallized grooves to isolate contacts on from another, those portions of currently amended claim 1 that were formerly part of canceled claims 2 and 3 are not rendered obvious by Andrews et al. in view of Billman and Mizumura.

Claims 4 and 6

Since claim 1 is neither anticipated nor rendered obvious by the prior art relied upon by the Examiner, pending claims 4 and 6, which depend from claim 1, and thus contain all of its limitations, cannot be anticipated or rendered obvious by Andrews et al. in view of Billman and Mizumura et al.

Furthermore, claims 4 and 6 contain additional limitations that are neither disclosed nor rendered obvious by the prior art relied upon by the Examiner. For example, even if Billman’s and Mizumura et al.’s shields were equivalent to the metallized grooves of the present invention, which they are not, the grooves of the present invention are disposed in an entirely different geometrical arrangement, to isolate *pairs* and *sets* of contacts, from the right-angled shields of Billman and Mizumura et al. that merely surround *individual* contacts.

Claim 4 recites “said housing of said socket connector is formed with grooves or groove portions on the fitting side of said housing *to make independent the pairs of socket contacts from one another*” (emphasis added). On the other hand, claim 6 recites “said block of the pin connector is formed with grooves on either, or both, of the fitting side of said block and the connecting side to a board *to make independent the sets of the pin contacts from one another*” (emphasis added). Since Billman’s and Mizumura et al.’s shields isolate *individual* contacts,

they do not suggest the isolation of *pairs* or *sets* of contacts, as recited in claims 4 and 6, respectively.

Accordingly, Applicants respectfully submit that pending claims 4 and 6 are not rendered obvious by Andrews et al. in view of Billman and Mizumura.

Claims 5, 7 and 11-16

Since claim 4 is neither anticipated nor rendered obvious by the prior art relied upon by the Examiner, as discussed above, pending claims 5, 11, 13 and 15, which all depend from claim 4 and thus contain all of its limitations, cannot be anticipated or rendered obvious by Andrews et al. in view of Billman and Mizumura et al.

In similar fashion, since pending claim 6 is neither anticipated nor rendered obvious by the prior art relied upon by the Examiner, pending claims 7, 12, 14 and 16, which all depend from claim 6 and thus contain all of its limitations, cannot be anticipated or rendered obvious by Andrews et al., in view of Billman and Mizumura et al.

Accordingly, Applicants respectfully submit that none of pending claims 5, 7 and 11-16 are not rendered obvious by Andrews et al. in view of Billman and Mizumura et al.

CONCLUSION

Applicant respectfully submits that this application is in condition for allowance, and such disposition is earnestly solicited. Applicant believes that no fees are due in addition to the two-month extension fee presently submitted. In the event that any fees are due, please charge undersigned's Deposit Account No. 02-4377.

Respectfully submitted,

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Dated: January 24, 2005

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AMENDMENTS TO THE DRAWINGS

Please replace Figure 1 with the enclosed sheet marked “Replacement Sheet.”